CLAIM SUMMARY DOCUMENT

1. (Currently Amended): A method of controlling an electrically actuated wear adjusting device of a brake application system for vehicles, particularly for rail vehicles, comprising:

a) determining an actual application stroke of brake pads from a release position to an application point onto an assigned brake disc or brake drum during a service braking having a covered application path from release to a service braking position as a function of ~~at least one measured application path traveled by the brake pads and~~ a measured braking force value assigned to this covered application path,

b) comparing the actual application stroke with a desired application or a desired-application stroke tolerance range and, if the actual application stroke deviates there from, computing an adjusting path from the deviation, and

c) electronically controlling the wear adjusting device as a function of the computed adjusting path to reestablish the desired application stroke or tolerance range.

2. (Currently Amended): The method according to Claim 1, wherein the ~~traveled~~ covered application path of the brake pads during the service braking is measured directly or indirectly on a moved component of the brake application system.

3. (Previously presented): The method according to Claim 2, wherein, during a service braking which took place at a lower braking force, only the braking force value which occurred for the first time and the assigned covered application path of the brake pads are used for determining the actual application stroke.

4. (Previously presented): The method according to Claim 3, wherein brakings at a lower braking force are brakings at which braking force values occur of approximately lower than or equal to 3% to 20% of a maximally possible braking force value.

5. (Previously presented): The method according to Claim 2, wherein, during a service braking which took place at a higher braking force, the braking force value and the respectively assigned covered application path of the brake pads are

measured several times successively for determining a braking-force application path course, from which the actual application stroke is extrapolated.

6. (Previously presented): The method according to Claim 5, wherein brakings at a higher braking force are brakings at which braking force values occur of approximately more than 3% to 20% of a maximally possible braking force value.

7. (Previously presented): The method according to Claim 1, wherein the wear adjuster for the wear adjusting is actuated for a time depending on the adjusting path.

8. (Previously presented): The method according to Claim 1, wherein the adjusting of the brake pad play takes place in the released or not applied condition of the brake application system.

9. (Currently Amended): A method of controlling an electrically actuated wear adjusting device of a brake application system for vehicles, particularly for rail vehicles, comprising:

a) operating the brake application system until the brake pads have reached a defined desired application point or a desired application point tolerance range,

b) electrically actuating the wear adjusting device until a measured electric braking force signal is present for the first time, and

c) restoring the brake application system ~~in~~ to a release position from the position the of step b.

10. (Previously presented): The method according to Claim 9, wherein it is implemented at least for the upgrading or initialization from a position of the brake application system subjected to an emergency release or an auxiliary release, together with a test run.

11. (Currently Amended): A device for controlling an electrically actuated wear adjusting device of a brake application system for vehicles, particularly for rail vehicles, comprising:

a) sensors for measuring at least an application path from a release position to a service braking application position covered by brake pads and a braking force value assigned to this application path during a service braking and for generating corresponding output signals,

b) means for determining an actual application stroke from the release position to an application point of the brake pads to an assigned brake disc or brake drum as a function of the output signals,

c) means for comparing the actual application stroke with a desired application stroke or a desired application stroke tolerance range and for calculating an adjusting path from the deviation, and

d) means for controlling the wear adjusting device as a function of the calculated adjusting path to reestablish the desired application stroke or tolerance range.

12. (Previously presented): The device according to Claim 11, wherein the sensors include sensors for the path or angle measurement and sensors for the force measurement.

13. (Previously presented): The device according to Claim 12, wherein the brake application system comprises a force converter for converting energy supplied by a brake actuator to a brake application movement, and the force converter contains a shearing force measuring screw arranged in the flow of force as the sensor for measuring the force.

14. (Previously presented): The device according to Claim 13, wherein the shearing force measuring screw forms a hinge pin of a hinge mutually connecting at least two force transmission elements of the force converter, at least one strain gauge being held at the circumference of the shearing force measuring screw, which strain gauge generates a corresponding signal acting upon the hinge and being proportional to the just existing braking force.

15. (Previously presented): The device according to Claim 14, wherein the sensors for the path or angle measurement contain an angle encoder which measures the angle of rotation of a motor driving the brake actuator and modulates a corresponding signal.

16. (Previously presented): The device according to Claim 11, wherein the means for determining an actual application stroke, the means for comparing the actual application stroke with a desired application stroke or a desired application stroke tolerance range as well as the means for controlling the wear adjusting device

are formed by an electronic control and automatic control unit having at least one microcomputer which communicates with the sensors and the wear adjuster.

17. (Previously presented): The device according to Claim 16, wherein the electrically actuated wear adjusting device has a wear adjuster constructed as a brake actuator, with a screw drive having a threaded spindle as a screw parts and a nut which can be screwed to the threaded spindle, one screw part of the screw drive being electrically driven for the wear adjusting, and the other screw part being electrically driven for the emergency and/or auxiliary release of the brake.

18. (Previously presented): A vehicle brake, particularly a rail vehicle brake, having an electrically actuated wear adjusting device of a brake application system, containing a device according to Claim 11.

19. (Currently Amended): ~~The~~ A method ~~according to Claim 1,~~ of controlling an electrically actuated wear adjusting device of a brake application system for vehicles, particularly for rail vehicles, comprising:

a) determining an actual application stroke of brake pads from a release position to an application point onto an assigned brake disc or brake drum during a service braking having a covered application path from release to a service braking position as a function of at least one measured application path traveled by the brake pads and a measured braking force value assigned to this covered application path,

b) comparing the actual application stroke with a desired application or a desired-application stroke tolerance range and, if the actual application stroke deviates there from, computing an adjusting path from the deviation, and

c) electronically controlling the wear adjusting device as a function of the computed adjusting path to reestablish the desired application stroke or tolerance range, and

wherein, during a service braking which took place at a lower braking force, only the braking force value which occurred for the first time and the assigned covered application path of the brake pads are used for determining the actual application stroke.

20. (Currently amended): ~~The~~ A method ~~according to Claim 1,~~ of controlling an electrically actuated wear adjusting device of a brake application system for vehicles, particularly for rail vehicles, comprising:

a) determining an actual application stroke of brake pads from a release position to an application point onto an assigned brake disc or brake drum during a service braking having a covered application path from release to a service braking position as a function of at least one measured application path traveled by the brake pads and a measured braking force value assigned to this covered application path,

b) comparing the actual application stroke with a desired application or a desired-application stroke tolerance range and, if the actual application stroke deviates there from, computing an adjusting path from the deviation, and

c) electronically controlling the wear adjusting device as a function of the computed adjusting path to reestablish the desired application stroke or tolerance range, and

wherein, during a service braking which took place at a higher braking force, the braking force value and the respectively assigned covered application path of the brake pads are measured several times successively for determining a braking-force application path course, from which the actual application stroke is extrapolated.